

REMARKS

Please consider the application in view of the following remarks. Applicant thanks the Examiner for carefully considering this application.

Disposition of Claims

Claims 1-20 were pending in the present application. Claims 1, 11, and 16 are independent. The remaining claims depend, either directly or indirectly, from claims 1, 11, and 16.

Claim Amendments

Independent claims 1, 11, and 16 have been amended to clarify the preventive and corrective methods used by the invention to extend the $\pm \pi$ (± 180 degrees) phase capture range. Support for these amendments can be found, for example, in paragraphs [0040], [0041], and [0042] of the Specification.

Rejections under 35 U.S.C. §102

U.S. Patent No. 6,316,976

Claims 1, 4-8, and 10-20 stand rejected under 35 U.S.C. §102(b) as being anticipated by Miller, Jr. et al., U.S. Patent No. 6,316,976 (hereinafter "Miller"). To the extent that these rejections still apply to amended claims 1, 11, and 16, the § 102(b) rejection is respectfully traversed.

Independent claims 1, 11, and 16 have been amended to more clearly describe the present invention. Specifically, the claimed invention relates to a method for extending the phase capture range of a digital delay locked loop. Amended claims 1, 11, and 16 disclose that at least one boundary of the $\pm\pi$ (± 180 degrees) phase capture range is avoided by configuring initial startup and reset values of the delay code. Amended claims 1, 11, and 16 further disclose that exceeding a boundary of the $\pm\pi$ (± 180 degrees) phase capture range triggers a response wherein the reset value of the delay code is different than that of the initial startup and at least one previous reset's delay code.

In contrast, Miller discloses methods for handling states of both maximum and minimum delay, indicating that the Miller invention may exceed both boundaries of the $\pm\pi$ (± 180 degrees) phase capture range. In addition, Miller does not provide a mechanism for configuring an initial startup value of the delay code, which in the applicant's invention prevents exceeding one or more boundaries of a $\pm\pi$ (± 180 degrees) phase capture range, and correspondingly avoids at least one state of minimum or maximum delay.

Therefore, Miller cannot and does not anticipate the ability to avoid one boundary of the phase capture range. Accordingly, withdrawal of the § 102 rejection of amended claims 1, 11, and 16 is respectfully requested. Claims 4-8, 10, 12-15, and 17-20, which depend either indirectly or directly from claims 1, 11 and 16, are patentable for the same reasons.

Rejections under 35 U.S.C. §103

Claims 2, 3, and 9 stand rejected as being unpatentable over Miller. To the extent that the rejections still apply to claims 2, 3, and 9, the rejections are respectfully traversed.

As stated above, in claims 1, 11, and 16, Miller teaches methods for handling states of both maximum and minimum delay, suggesting that both boundaries of the $\pm\pi$ (± 180 degrees) phase capture range are exceeded. In contrast, the claimed invention is configured to specifically avoid at least one boundary of the phase capture range. As a result, Miller teaches a solution to a problem that the claimed invention avoids altogether. Further, the claimed invention provides a mechanism for configuring the initial startup value of the delay code, which Miller does not teach or suggest. Instead, Miller attempts to correct for initialization conditions by fixing any maximum or minimum delay states encountered by the digital delay locked loop. Once again, Miller uses a corrective approach to exceeding both boundaries of the phase capture range, whereas the current invention utilizes a preventive technique to avoid at least one boundary of the phase capture range.

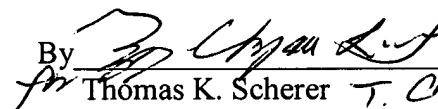
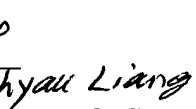
The Applicant respectfully asserts that in light of the disclosure of Miller, the present invention would not have been obvious to one of ordinary skill in the art in view of Miller, and that Miller fails to teach or suggest the present invention as recited in claims 1, 11, and 16. Claims 2, 3, and 9 depend, either directly or indirectly, on amended independent claim 1 and are allowable for at least the same reasons. Accordingly, withdrawal of this rejection is respectfully traversed.

Conclusion

Applicant believes this reply is fully responsive to all outstanding issues and places this application in condition for allowance. If this belief is incorrect, or other issues arise, the Examiner is encouraged to contact the undersigned or his associates at the telephone number listed below. Please apply any charges not covered, or any credits, to Deposit Account 50-0591 (Reference Number 03226/328001).

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Respectfully submitted,

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